

sion of this beautiful and interesting species into the fauna of Europe.

The specimen of the Smyrna kingfisher depicted by Albin must be regarded as an immature individual, and we must suppose that the uppermost series of wing-covers in his plate were either coloured green instead of rufous through an oversight of the artist, or that they indicate a still earlier stage of development than the Indian specimens which I have had opportunities of examining.

The description of the specimen from Macri is as follows :—Rich rufous brown on the head, cheeks, sides and back of neck, lesser wing-covers, under wing-covers, sides of breast, abdomen, and lower tail-covers; deep black on middle wing-covers, forming a large patch; greenish blue, changing in certain lights to verdigris-green, on upper back, scapulars, spurious wing, greater and primary wing-covers, secondaries, tertials and rectrices. On the rump and upper tail-covers this blue assumes a purer tint. Terminal half of primaries black, basal half greenish blue externally and white within, gradually increasing till the ninth primary is almost wholly white. Inner margins of secondaries and of rectrices blackish brown; chin, throat and middle of breast white; beak and legs vermilion-red. Total length $11\frac{1}{4}$ inches; beak to front $2\frac{1}{4}$, to gape $2\frac{3}{4}$, breadth 8 lines, height 8 lines; wing to end of primaries $4\frac{3}{4}$ inches, to end of tertials the same; middle rectrices 3 inches 7 lines, outer ditto 2 inches 11 lines; tarsus 7 lines; middle toe and claw $1\frac{1}{4}$ inch, hind ditto 7 lines.

XLVII.—*Notice of some Fungi collected by C. Darwin, Esq., in South America and the Islands of the Pacific.* By the Rev. M. J. BERKELEY, M.A., F.L.S.

[With Three Plates.]

THE following enumeration requires no especial prefatory observations. A portion of the fungi collected by Mr. Darwin has already been noticed in this Journal without any knowledge that there were more in the Museum at Cambridge. The present additional species were placed in my hands some time since by the kindness of Professor Henslow, but the publication has been delayed in consequence of the accidental loss of the notes and sketches which were prepared soon after their arrival. The delay has not however been without benefit, as I have since had the advantage of studying several very rich collections of exotic fungi, and have therefore been more confident in the determination of the species. I am under pecu-

liar obligation to my friend Dr. Montagne, who has not only supplied me with specimens of the greater part of his published species, but has communicated many novelties of the greatest interest before publication.

1. *Agaricus salebrosus*, n. s. Sordidè flavus, pallidus; pileo subreniformi lobato subplicato subcarnoso, sulcis brevibus radiantibus notato, pellucido-striato; lamellis latis subdistantibus, acie subdentatâ; stipite nullo. Darw. No. 216.

On sticks, covered with bark. Rio Janeiro. May 1832.

One to two inches or more broad, of a pale dirty yellow. Pilei at first entirely resupinate, reniform, sometimes somewhat confluent; at length reflexed and free, more or less orbicular, smooth, more or less lobed and almost plicate, marked with short distinct radiating shallow furrows; margin thin, acute, pellucido-striate. Gills broad, rather distant, their edge slightly toothed. Stem none, but the portion of the pileus by which it is attached is thickened.

Allied to the species of the first section of Fries' division *Resupinati* in the tribe *Pleurotus*, in which it will range next to *Ag. porrigens*. The upper stratum of the pileus does not appear to be gelatinous.

PLATE IX. fig. 1. *Ag. salebrosus*, nat. size.

2. *Lentinus villosus*, Fr. (non Klz. in 'Linn.'). Darw. No. 267.

On sticks. Rio Janeiro. May 1832.

3. *Schizophyllum commune*, Fr., Darw. No. 463.

On orange-trees. Rio Janeiro. May.

4. *Polyporus sanguineus*, Fr., Darw. No. 597.

Rio Janeiro. June.

5. *Polyporus igniarius*, Fr., Darw. No. 3285.

Var. *scaber*, Berk., Ann. of Nat. Hist., vol. iii. p. 324.

On a Mimosa. James Island (Gallopagos).

A large form of the variety described in an account of Fungi from Van Diemen's Land.

6. *Hexagona fasciata*, n. s. Pileo sessili tenui coriaceo rigido, reniformi, suprâ concavo ligneo-fulvescente nitidiusculo demùm glaberrimo rugosiusculo, zonis crebris passim profundioribus sulcato; hymenio ligneo-pallido; poris submagnis subhexagonis, acie lævi vel subdentatâ. Darw. No. 3391.

Tahiti. November.

Pileus 3 inches broad, $2\frac{1}{2}$ inches long, reniform, thin but coriaceous and rigid, subimbricated, very concave above, marked with many concentric grooves, most of which are shallow, and a few obscure radiating ribs scarcely visible except towards the margin, where they form small vaulted knobs, with corresponding depressions in the hymenium, smooth, very minutely rugose, of a tawny wood colour, with numerous darker zones. Hymenium and substance wood-coloured. Pores

rather large, $\frac{1}{4}$ th of an inch in diameter, obscurely hexagonal, minutely pubescent within; margin, even in those portions of the hymenium which are horizontal, but slightly toothed where the pores are at all oblique.

This very fine species, which has just the habit of *Stereum ostrea* as figured by Nees von Esenbeck, approaches somewhat in character to *Hexagona tenuis*, but there is not the slightest cinereous tinge, and the whole habit is different. The species however to which it is nearest is *Hexagona polygramma*, Montagne, of which I have an excellent specimen from the Neel-gherries. But though its colours are nearly the same, it is a much more even plant, without any of the little raised lines which characterize the Indian species. It is more frequently zoned and in a different way; it is thicker and rigid, not coriaceo-membranaceous; the pores too are much smaller. Individuals probably occur with a lateral stem.

PLATE IX. fig. 2. *a*, *Hexagona fasciata*, nat. size; *b*, under-side of a young specimen.

7. *Laschia infundibuliformis*, n. s. Pileo infundibuliformi, sublobato, glabro, minutè striato; alveolis plùs minùs elongatis, ad basin stipitis obesi ex dissepimentis denticulatis hispiduli decurrentibus. Darw. No. 247.

On rotten wood in forest. Rio Janeiro. May 1832.

Whole plant gelatinous, flaccid, yellow-brown, very thin and delicate, half an inch broad, quite smooth, but minutely striate, infundibuliform, slightly lobed, at length split on one side. Stem a quarter of an inch high, confluent with the pileus. Hymenium favoso-alveolar; alveoli angular, more or less elongated, especially towards the stem, where they become linear and extend to its base; dissepiments obtuse, those of the stem minutely denticulate, so as to give it a slightly hispid appearance.

PLATE IX. fig. 3. *a*, *Laschia infundibuliformis*, nat. size; *b*, ditto magnified; *c*, a section to show the form of the edge of the dissepiment.

8. *Cora pavonia*, Fr., Darw. No. 347.

Highest peak of Fernando Noronha.

9. *Radulum palmatum*, n. s. Carneo-rufum; subiculo effuso maculas irregularitè ellipticas demùm lobatas efformante; processibus hymenii primò aculeiformibus, dein palmatis multifidis compressis. Darw. No. 463.

On orange-trees. Rio Janeiro. May.

Forming, by the confluence of several small, effused, more or less elliptic spots, lobed patches, which are from 1 to 2 inches long. Subiculum tomentose, from which after the manner of a lichen arise numerous erect, minutely tomentose processes 1 to 3 lines high, which are at first cylindrical and setiform, but soon become confluent, compressed, dilated and palmate. The whole plant is of a rufous flesh-colour, which probably in the fresh plant inclines to scarlet. This exceedingly pretty species, which is very different from any with

which I am acquainted, has quite the habit of a lichen; indeed, it was in the same packet with *Borrera chrysophthalma* and other cortical lichens. It does not spring from beneath the bark.

PLATE X. fig. 1. *a*, *Radulum palmatum*, nat. size; *b*, processes of hymenium, magnified.

10. *Exidia Auricula Judæ*, Fr., Darw. No. 973.

On beech-trees. Port Famine. May 1833.

The specimens appear to be the same as the European species, but the down of the external surface is not so strongly marked.

11. *Peziza scutellata*, L., Darw. No. 1111.

On rotten wood in a forest. I. of Inchy, N. of Cape Tres Montes, 1834.

12. *Nidularia plicata*, Fr., Darw. No. 268.

On sticks in forest. Rio Janeiro. June 1832.

13. *Phallus campanulatus*, n. s. Capitulo libero campanulato ruguloso pervio; apice annuliformi; stipite suprà deorsumque attenuato. Darw. No. 712.

On sand-dunes. Maldonado. June 1833.

Dirty white; head bell-shaped, more than an inch broad at the base, nearly $1\frac{1}{2}$ inch high, free below, with the border rather spreading, minutely wrinkled, ending above in a distinct, abrupt, ring-like border with a broad perforation in its centre, covered when fresh with a greenish black at length fluid mass, which has a scarcely offensive odour. Stem 4 inches high, $\frac{5}{8}$ ths of an inch thick, attenuated above and below, deeply but minutely pitted, inserted by a very narrow base into the little cup-shaped inner volva. The outer volva was unfortunately so broken that its form could not be ascertained.

The species belongs to the same section with *Phallus aurantiacus*, Mont., and *Phallus impudicus*, but is distinguished by the ring-like apex and the rugulose, not reticulate, hymenium. Plumier, 'Filices,' 167. G, is most probably the same thing, but the peculiar form of the apex is not represented.

PLATE X. fig. 2. *a*, *Phallus campanulatus*, natural size, with its inner volva; *b*, the inner volva separated from the stem to show its mode of attachment.

14. *Clathrus crispus*, Turp.

Var. β . *obovatus*. Darw. No. 647.

On sand-dunes. Maldonado. Not common. May and June 1832.

"Salmon-coloured; brownish-green internally."

All the specimens, which, with one exception, are in a young state, are regularly obovate or pyriform, and in this point strikingly different from the plant of Turpin. In other respects the resemblance is so close that I am constrained to consider it a mere variety, especially as *Clathrus cancellatus*, from Micheli's and Brondeau's figures, appears to be occasionally obovate. It is quite scentless, whereas *C. cancellatus* is described as extremely fœtid. It appears to be the species figured by Plumier, 'Filices,' tab. 167. H.

No analysis of the genus appears to have been given since that of Micheli, which, as is usual with that admirable author, is wonderfully correct, considering the state of botany in his days. I am therefore happy to have an opportunity of being able to give figures from specimens preserved in spirits. If a vertical section be made in a young plant before the volva is burst, the receptacle is found to be attached at the base by a mere point; its substance, especially the lower part, is perforated with a few elongated cavities, and the centre filled with an opaque jelly. For about two-thirds of its length the inner walls of the receptacle are studded with morchellæ-form knobs arranged round its apertures, hollow within, and consisting of a highly complicated sinuous mass like that of the hymenium of *Phallus*, which contains innumerable oblong sporidia. The receptacle is adorned, both externally and internally, with parallel striæ, which give it a very elegant appearance. In the old plant the portions of the hymenium are seen shrunk and withered, each seated at the point from which the ribs diverge from the border of the apertures. The number of apertures seems to be variable, but is always much greater than that of *Clathrus cancellatus*, which occurs in New Zealand as well as in the northern hemisphere.

PLATE XI. fig. 1. *a*, *Clathrus crispus*, natural size before the bursting of the volva; *b*, ditto with the volva just burst; *c*, ditto further advanced; *d*, section of a young plant, showing the position of the knobs of the hymenium; *e*, section of a portion of the hymenium highly magnified to show its sinuous structure; *f*, sporidia; *g*, inner surface of a portion of an old plant to show the portions of the hymenium *in situ* at the juncture of the ribs and border of the aperture.

15. *Sphæria polymorpha*, Pers. Darw. No. 596.

On rotten trees in forest. Rio Janeiro. May.

16.* *Geaster saccatus*, Fr. Darw. No. 664. 1493.

Damp, rather shady places. Maldonado. June 1832.

Inner peridium, when fresh, dark brown, outer lighter.

17. *Bovista cervina*, n. s. Parva globosa peridio membranaceo pallido cervino, exteriori rigidiusculo; ore minuto subrotundo, capillitio, sporidiisque concoloribus. Darw. No. 754.

Driest part of plains. Rio Negro, Patagonia. 1833.

Subglobose, attached by a broad base to the earth, about $\frac{5}{8}$ ths of an inch broad, fawn-coloured; inner peridium very thin and membranaceous, opening by a minute round orifice; outer more rigid, soon falling off, but a portion of it remains in general about the base. Sporidia globose, as far as I can see, not pedicellate, of a pale dingy umber, as well as the capillitium.

18. *Arcyria decipiens*, n. s. Gregaria, peridiis stipitatis

* I have lately ascertained, in young unopened specimens of *Geaster fibratus*, the curious fact that the inner peridium with its columella and hymenium are continued from the outer coat of the outer peridium through an aperture at the base of the inner coriaceous coat, which is of a completely different substance.

obovatis ochraceis, capillitio supra libero obovato erecto sporidiisque concoloribus. Darw. No. 224.

On the rough bark of palms. Rio Janeiro. May 1832.

Growing in little gregarious patches about a line high. Stem about as long as the peridium, which is smooth, shining, of a yellow ochre, breaking away gradually above, but persistent at the base, and crateriform. Capillitium free above, slightly attached below, sometimes falling out entire from the peridium. Sporidia globose.

This plant has very much the habit of *Trichia clavata*, of which species I considered it a form till I examined the capillitium, which is that of an *Arcyria*, being reticulate, and not filled with spiral threads.

PLATE X. fig. 3. *a*, plants of *Arcyria decipiens* magnified; *b*, capillitium, ditto; *c*, portion of capillitium with sporidia highly magnified.

XLVIII.—Remarks on some points of Vegetable Structure.

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[With a Plate.]

IN the last number of the 'Linnæa' appears a paper of Mohl's*, in which the origin of a secondary layer out of spiral fibres in a vessel is denied, as also that the punctations in dotted tubes depend for their presence upon the existence of this secondary internal layer. Yet in another paragraph of the same paper it is also stated, that the first approach towards the development of the punctations is seen in the existence of a delicate *fibrous net upon* the lateral walls of the vessels, especially of those which lie next to other vessels. Now from this latter statement it certainly appears, that the presence of *fibres* is admitted by Mohl though denied in another, and also from his averment that this fibrous net is seen *upon* the lateral walls—which we take to mean externally to the homogeneous membrane of which the vessel is at first composed; we assume that he here admits its formation to be secondary in regard to period of development, though its situation is outward. Though it is denied by Mohl that the fibres are spiral, from what we have just stated, however, we could draw no other conclusion than that the existence of a *secondarily formed fibrous layer* is admitted, did it not appear contradicted afterwards by his stating that no network or fibres exist *per se*, but are only appearances. The author says, "the meshes of the net answer to the after-present circles of the dot, consequently

* A translation of this valuable paper by the Rev. M. J. Berkeley appeared, together with the plates, in our last number.—EDIT.